

P.G.KiM Sp.Z.o.o.

Inowroclaw | Poland

MBT BIOSTABILIZATION PLANT



AFTER THE INTRODUCTION OF RECENT EUROPEAN REGULATIONS ON WASTE TREATMENT, THE MUNICIPALITY OF INOWROCLAW HAS CHOSEN ENTSORGA AS A CERTIFIED SUPPLIER TO DELIVER A **BIOLOGICAL MECHANICAL TREATMENT PLANT (MBT)** TO STABILIZE URBAN WASTE AND REDUCE THEIR GREENHOUSE GAS EMISSIONS.

TODAY THE PLANT, MADE WITH **ENTSORGA'S SCRABBLE™ TECHNOLOGY AND A BIOFILTER**, IS ONE OF THE MOST ADVANCED IN POLAND.

DATI IMPIANTO

Company	PGKiM SP. z o.o.
Yearly Throughput	20.000 TPA MSW
Waste processed	Unsorted Municipal Solid Waste
Final Output	60.000 t/y
Start up	May 2014
Plant Type	Mechanical Biological Treatment
Population Served	10.000

COMPANY

PGKiM SP. z o.o. is a company controlled by the municipality of Inowrocław, which provides real estate management services, to both new and historic buildings, in the city of Inowrocław and Żłotniki Kujawskich. Currently the company manages 139 buildings, also providing them with waste collection and treatment services.

PROJECT

With the introduction in 2013 of new rules for urban waste management, many of the plants in operation in Poland were inadequate and were forced to close. This did not happen at the Inowrocław disposal plant, which was instead renovated according to **the most innovative treatment solutions** to comply with the recent regulatory requirements. As part of these upgrades, Entsorga was awarded **with the project for a bio-stabilization line of unsorted municipal solid waste**.

ENTSORGA'S SOLUTION

Entsorga provided the biological treatment section based on the proprietary **Scrabble™ technology**, a modular and reliable solution, convenient also in terms of capital investments. The system created is composed of **4 Scrabble™ biocells** and a **Biofilter**, to guarantee **excellent odor control**.

PROCESS

Municipal Solid Waste is processed in **Scrabble™ biocells (1)**, where undergoes a biological treatment process to be stabilized. The degradation of organic substances due to the natural action of the bacteria is accelerated by **a forced aeration system (2)** supplying oxygen through air pipes distributed in the concrete floor of the biocells, and at the same time guarantees the best temperature to sanitize the mass (keeping it at 55 ° c for minimum 72 h). The process is totally managed by the **control system (2)**, which tracks its evolution and detects the biomass temperatures with thermometric probes, thus optimizing the air flow. The process air is then aspirated and sent to the **biofilter (4)** to be treated before being released into the atmosphere.

(1) **SCRABBLE BIOCELLS™** FOR ACCELERATED STABILIZATION



(2) **FORCED AERATION SYSTEM**



(3) **24/7 AUTOMATIC CONTROL SYSTEM**



(4) **BIOFILTER** TO TREAT PROCESS AIR EFFLUENTS

FINAL PRODUCT

The result is a **stable output** with a very **low moisture content** (respirometric index <1000 mg O₂ / kg s.v. * h⁻¹) suitable for being sent to landfills, in compliance with the most recent European standards. The biostabilization process, making the putrescible part of undifferentiated waste (MSW) inert, in fact **drastically reduces greenhouse gas emissions (biogas)** and **leachate** production, to greatly decrease impact on the environment.

STRENGTHS

- **Minimum environmental impact:** The biological treatment phase is carried out inside the biocells and the use of the biofilter guarantees the elimination of the odors during the treatment phase.
- **reduced operation and labor costs:** the complete automation of the plant limits access to the waste treatment areas, protecting health and guaranteeing the safety of the operators.
- **low energy consumption** thanks to the optimization of the airflows, performed automatically by the control system.

TECHNOLOGIES UTILIZED

The plant is equipped with Entsorga's proprietary **Scrabble™ Biocells System and Biofilter**.